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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.  |
|--|-------------|----------------------|---------------------|-------------------|
| 10/689,656   | 10/22/2003  | Mikhail Kejzelman    | 003301-054          | 6495              |
| 21839  | 7590        | 01/10/2006           | EXAMINER            |                   |
| BUCHANAN INGERSOLL PC<br>(INCLUDING BURNS, DOANE, SWECKER & MATHIS)<br>POST OFFICE BOX 1404<br>ALEXANDRIA, VA 22313-1404 |             |                      |                     | JENKINS, DANIEL J |
|  |             | ART UNIT             |                     | PAPER NUMBER      |
|  |             | 1742                 |                     |                   |

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/689,656             | KEJZELMAN ET AL.    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Daniel J. Jenkins      | 1742                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 November 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 20-31,34-40 and 48-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 20-31,34-40 and 48-51 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

Art Unit: 1742

1. Applicant contacted the Examiner and pointed out that pending claims 49-51 were not considered in the prior office action. At this time, the Examiner makes a new rejection addressing all pending claims.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 20-37, 39, 40, 48, 49, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman in view of Rutz.

Kaufman discloses the invention substantially as claimed. Kaufman discloses a method of forming a green compact comprising:

providing a iron based powder mixture (col. 5, lines 12-25); and  
compacting said iron based powder in a die to form a green compact (col. 6, lines 64-67).

Kaufman further discloses adding a lubricant to the powder mixture (col. 6, lines 58-60).

Kaufman further discloses adding graphite to the powder mixture (col. 6, lines 61-63).

Kaufman further discloses wherein the iron based powder is of the size -100 +325 (less than 150 um to more than 45 um) (see col. 6, lines 33-35) meeting Applicant's particle size limitation.

Kaufman further discloses wherein the iron based powder is formed by water atomization.

Kaufman is silent as to ejecting the green compact from the die, but such a limitation is inherent in the further processing of the green compact as disclosed by Kaufman.

However, Kaufman discloses compacting at pressures of 30-35 tsi (413-482 MPa) (see col. 6, lines 64-68), below the claimed range of at least about 800 MPa, in order to form green compacts of densities of about 6.5g/cc (see col. 8, lines 46-47).

Rutz et al. teaches that higher pressure, in the range of 69-2760 MPa, can be used to form green compacts of increased density, resulting in sintered bodies of high density for high density applications.

Rutz et al. further teaches that the compaction is performed warm meeting the limitation to an elevated temperature.

Rutz et al. teaches that this compaction pressure range can be used on similar powders and sizes.

It would have been obvious to one having ordinary skill in the art to use higher compaction pressures as taught by Rutz et al. in the invention of Kaufman in order to increase the density of the green compact for high density applications.

The overlap of pressure range establishing a prima facie case of obviousness (see MPEP 2144.05).

In regard to claims 21 and 34, Kaufman further teaches that copper is added to the mixture.

In regard to claim 22, no mention is made of the compaction performed in anything other than a single step.

In regard to claims 23-29, Kaufman is silent as to selection of particle size distribution within the provided range, but particle size is a known process parameter effecting compact density, and the selection and optimization to particle size distribution would be chosen to optimize density formation (see MPEP 2144.05 II).

In regard to claim 30, Kaufman provides an example of 0.25% graphite addition (col. 11, lines 11-12).

In regard to claim 31, Kaufman adds lubricant in an amount of 0.75%, which is slightly higher than the claimed range of between about 0.05 and about 0.6%, but when utilizing the warm compaction at high pressure as taught by Rutz et al., one would use the lubricant of Rutz et al., which is present in an amount preferably from 0.2-0.8%, thus overlapping Applicant's claimed range and establishing a prima facie case of obviousness.

5. Claims 20 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman in view of Ozaki.

Kaufman discloses the invention substantially as claimed (see paragraph 4 above).

Kaufman further discloses compacting at room temperature.

However, Kaufman discloses compacting at pressures of 30-35 tsi (413-482 MPa) (see col. 6, lines 64-68), below the claimed range of at least about 800 MPa, in order to form green compacts of densities of about 6.5g/cc (see col. 8, lines 46-47).

Ozaki et al. teaches to press at pressure of 1,177MPa to form compacts of high density.

Ozaki et al. teaches that higher pressure, providing an example of 1,177 MPa, can be used to form green compacts of increased density, resulting in sintered bodies of high density for high density applications.

It would have been obvious to one having ordinary skill in the art to use higher pressures as taught by Okaki et al. in the invention of Kaufman in order to increase the density of the formed body for applications where high density is required.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 571-272-1242. The examiner can normally be reached on M-TH6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1242. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel J. Jenkins  
Primary Examiner  
Art Unit 1742